

Weekly Report

21st, Oct. - 26th, Nov. 2017

Done:

1. The focus of this week is on data preprocessing and code learning.
2. About the wildfire data: two types available online:
 - (a) point data, mesh-like, by satellite, automatically updated
 - (b) perimeter data, by satellite, manually updated
 - (c) More:

Name: USDA Forest Service Data (Fire Data On Google Earth, points embraced by squares, detection data)

Space-Time:

Different geographical granularity from different satellite source: 4km 1km 750km 375m 30m(can't access)

fire detections within the last 6, 12 and 24 hours, and the 6 days previous to the last 24-hour period (six days' data)

Accurate to days (static file; but the animation file have records accurate to minutes)

Content: Fire detection, fire radiative power(fire intensity) static or animation, large events records (from 20080730)

Source MODIS: FD: 20120105 -- end2012 | 20130107 -- end2013 | 20140106 -- end2014 | 20150107 -- end2015 | 20160101 -- end2016 | 20170101 -- now

FRP: same

Source VIIRS(375m) from 20140615

Source AVHRR(1km), GOES(4km) from 20100427

We can also see some info like acres burned

Name: GEOMAC -- perimeter data (snapshots)

Space-Time: Organized by Place (event) Names and Dates, Accurate to minutes (manually selected); It has data that updated every two hours, but if no new fire, they just update the timestamp

Content: perimeter data of events

KML File coordinates

Start from 2010:

Name: CalFire

Start from 2003

The Napa, Sonoma fire was on Oct 9-10

But the report is finalized on Oct 17, so we need to look at the detailed info([http://www.fire.ca.gov/current_incidents/incidentdetails/Index/XXX\(id\)](http://www.fire.ca.gov/current_incidents/incidentdetails/Index/XXX(id)))

In this page we can see the start time, accurate to minutes, and Longitude and Latitude, acres burned

对于数据仍然是有不少问题的, 大致有以下几点: (1) 火灾边界数据更新机制不明. 上面也只是用了半自动方法得到的规律做的推测. 并且有些数据一直有更新记录有些又没有. (2) 为了简化问题我们限定范围在北加州或者更小的空间尺度上, 这个具体是哪些地方还得找 (3) 由于更新机制不明我们现在也就先把有的数据爬下来, 实

时更新的数据我们可以先考虑留好接口 (4)之前看的文章里有大量 fuel moisture 的东西, 经查阅这些 fuel 其实是植物含水量的意思, 此外 haze 数据和 smoke 数据也是重点, 后面会找一下 (5) 不同的数据源, 尤其是文本形式的报告怎么和其余纯粹数据关联起来? 不同的纯粹数据时间粒度不同又如何关联? 这里面产生了大量不确定性的问题. (6) 文件读取相关问题, 还在学习. kml 文件转换为 geojson 才方便绘制的问题还在学习. 用哪个库来绘制点, 线也还在学习, 可以考虑 D3 或者更直接的 deck.gl.

(d) perimeter data 已经下载到本地存储.

3. code: Objective JavaScript, Chrome debugging, Node.js and Express.js intro lessons.

To Do:

1. Try to build a framework which enables the data input and rendering based on Minfeng's code. The aim is to basically integrate the fire data and reports. Above mentioned problems should be addressed.

Paper reading

安排表

内容	DDL	Milestone
设计搭建框架	12.10	框架考虑的东西比较多; 代码学起来可能还算快, 但是数据可能会变\可能不同源头, 所以要多请教熟练工.
前后端学习	A.S.A.P	把 Node.js 之前一些一知半解的东西实际操作了一遍